No. 200100126

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Virginia Tech Intellectual Properties, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE [illegible] (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'Century II'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twelfth day of September, in the year two thousand one.

Attest:

Paul M. Zurbuch

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

[illegible]

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions* Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
Virginia Tech Intellectual Properties, Inc.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
VA95-52-60

2. VARIETY NAME
CENTURY II

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
Virginia Tech Intellectual Properties, Inc.
1872 Pratt Dr., Ste.1625
Blacksburg, VA 24060

5. TELEPHONE *(include area code)*
540-951-9378

6. FAX *(include area code)*
540-951-5292

FOR OFFICIAL USE ONLY

PVPO NUMBER
200100126

FILING DATE
March 9, 2001

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
Corporation

8. IF INCORPORATED, GIVE STATE OF INCORPORATION
Virginia

9. DATE OF INCORPORATION
June 20, 1985

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE (S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*

Carl A. Griffey
Crop and Soil Environmental Sciences
Virginia Tech
Blacksburg, VA 24061-0404

FEES RECEIVED

FILING AND EXAMINATION FEES:
$ 2450.00 + 255.00
DATE 3/9/01 4/2/01

CERTIFICATION FEE:
$ 320.00
DATE 7/26/01

11. TELEPHONE *(include area code)*
540-231-9789

12. FAX *(include area code)*
540-231-3431

13. E-MAIL
Cgriffey@vt.edu

14. CROP KIND *(Common Name)*
Wheat, Common

15. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)

- a. ☑ Exhibit A. Origin and Breeding History of the Variety
- b. ☑ Exhibit B. Statement of Distinctness
- c. ☑ Exhibit C. Objective Description of Variety
- d. ☑ Exhibit D. Additional Description of the Variety *(Optional)*
- e. ☑ Exhibit E. Statement of the Basis of the Owner's Ownership
- f. ☑ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
- g. ☑ Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *See Section 83(b) of the Plant Variety Protection Act)*
☑ YES *(If "yes", answer items 20 and 21 below)* ☐ NO *(If "no," go to item 22)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? ☑ YES ☐ NO
IF YES, WHICH CLASSES? ☑ FOUNDATION ☐ REGISTERED ☑ CERTIFIED

21. DOES THE OWNER SPECIFY THAT THE CLASSES BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ YES ☑ NO
IF YES, SPECIFY THE NUMBER 1, 2, 3, etc. ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED
(If additional explanation is necessary, please use the space indicated on the reverse.)

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☑ YES ☐ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☑ NO
IF YES, GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

24. The owner declares that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner (s) is (are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner (s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER		SIGNATURE OF OWNER	
Michael J. Martin			
NAME *(Please print or type)*		NAME *(Please print or type)*	
Michael J. Martin			
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
Executive Vice President	3/9/01		

S&T-470 (2-99) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces STD-470 (6-86) which is obsolete. *(See reverse for instructions and information collection burden statement)*

INSTRUCTIONS

200100126

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to **reproduce** the variety, or for tuber reproduced varieties verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for $2,450 ($300 filing fee and $2,150 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice.)* Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building,10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of $300 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office
Telephone: (301) 504-5518
FAX: (301) 504-5291
Homepage: http://www.ams.usda.gov/science/pvp.htm

ITEM

18a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, *etc.*

18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

19. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

21. *See Section 83 of the Act for the Contents and Term of Plant Variety Protection.*

22. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

23. *See Section 5.5 of the Act for instructions on claiming the benefit of an earlier filing date.*

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21. CONTINUED FROM FRONT *(Please provide a statement as to the limitation and sequence of generations that may be certified.)*

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22. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

Certified seed of CENTURY II was first sold to growers in Fall 2000.

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23. CONTINUED FROM FRONT *(Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)*

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)*

To avoid conflict with other variety names in use, the applicant must check the variety names proposed by contacting: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center--East, Beltsville, MD 20705. Telephone: (301) 504-8089.

18A. Exhibit A: Origin and Breeding History

Genealogy and Breeding Method. CENTURY II, formerly designated VA95-52-60, was selected in 1993 as an F_5 headrow derived from the cross 'Saluda'*2/SC824607. The parentage of SC824607 is 'Blueboy II'/T72-60//CI12373/3/'Knox 62'/Coker70-14/4/ 'Axminster'/5/'Lontra'/6/'Coker76-35'. The cross was completed in 1988, and the population was advanced using a modified bulk breeding method. The major criteria used in selection of CENTURY II were early head emergence, short plant height, and resistance to leaf rust (*Puccinia triticina*). CENTURY II has been evaluated in the Virginia State Wheat Test since 1996.

Population Advancement and Selection of the Variety. The cross from which CENTURY II was derived was completed in 1988. It was then advanced from the F_2 to F_4 generation using a modified bulk breeding method. During each generation, spikes of desirable shape (not too tapering), size (medium to large), and cleanliness (free of obvious disease) were selected from plants short in stature and relatively early in maturity. The selected heads were threshed in bulk and the seed was planted to advance the population in the next season. In the F_4 generation, spikes were harvested from the population and threshed individually. Seed from each head were planted in 4-foot headrows. CENTURY II was derived in 1993 from a single F_5 headrow selected for short plant height, good straw strength, and resistance to leaf rust. This pure line, designated VA95-52-60, was evaluated in single 45 square foot observation yield-plots in 1994 and in the Virginia Preliminary Wheat Test in 1995. CENTURY II has been evaluated in the Virginia State Wheat Test since 1996.

Multiplication and Purification. The initial Breeder seed of CENTURY II was developed via removal of visual variants from an F_{10} purification block in 1997-98. While CENTURY II has remained stable and uniform through five generations of self-pollination, the initial Breeder Seed contained up to 0.3% taller plants, 0.2% plants with shorter or longer awns, and 0.06% plants with lax head type. In the fall of 1999, 320 F_{12} headrows of CENTURY II were planted to develop a purer source of Breeder Seed. These rows were evaluated for uniformity and trueness of type several time during the growing season. Variant rows were removed, and the remaining rows were harvested in bulk to provide a new source of Breeder Seed.

CENTURY II Wheat

18B. Exhibit B: Novelty Statement

CENTURY II is uniquely different from all known wheat cultivars, but is most similar to its parent Saluda. Based on three years (1997-1999) of seedling tests conducted by the USDA-ARS Cereal Disease Laboratory in Saint Paul, MN, CENTURY II is resistant to stem rust (*Puccinia graminis*) race 15B-2 (TPM), while Saluda is susceptible based on data from the 1989-90 and 1990-91 USDA-ARS Uniform Southern Soft Red Winter Wheat Nursery. These data sources also indicate that CENTURY II is resistant to races of leaf rust possessing virulence to gene *Lr*11, while Saluda is susceptible to races possessing this virulence gene. CENTURY II is susceptible to Hessian Fly biotypes GP, B, C, D, E and L based on seedling tests conducted by USDA-ARS (West Lafayette, IN), while Saluda is resistant to biotypes GP and E. Seed of CENTURY II exhibit a brown phenol reaction, while those of Saluda give a fawn color.

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK AND SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Virginia Tech Intellectual Properties, Inc.

ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*)
1872 Pratt Drive, Suite 1625
Blacksburg, VA 24060

FOR OFFICIAL USE ONLY
PVPO NUMBER 200100126

VARIETY NAME OR TEMPORARY DESIGNATION
Century II

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. KIND:
[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:
[2] 1 = SPRING 2 = WINTER 3 = OTHER (*Specify*) _____ [1] 1 = SOFT 2 = HARD 3 = OTHER (*Specify*) _____
[2] 1 = WHITE 2 = RED 3 = OTHER (*Specify*) _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:
[ ][ ][ ] FIRST FLOWERING [ ][ ][ ] LAST FLOWERING

4. MATURITY (*50% Flowering*):
[0][1] NO. OF DAYS *EARLIER* THAN ..... [7] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 7=Coker 9835
[0][1] NO. OF DAYS *LATER* THAN ..... [8] 4 = LEMHI 5 = NUGAINES 6 = LEEDS 8=Madison

5. PLANT HEIGHT (*From soil level to top of head*):
[ ][9.][1] CM. HIGH
[0][8] CM. TALLER THAN ..... [7]
[0][5] CM. SHORTER THAN ..... [8] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 7=Coker 9835 4 = LEMHI 5 = NUGAINES 6 = LEEDS 8=Madison

6. PLANT COLOR AT BOOTING (*See reverse*):
[3] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:
[1] 1 = YELLOW 2 = PURPLE

8. STEM:
[2] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom: 1 = ABSENT 2 = PRESENT
[1] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT
[1] Internodes: 1 = HOLLOW 2 = SOLID
[0][4] NO. OF NODES (*Originating from node above ground*)
[2][2] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:
[2] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:
[1] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER (*Specify*): _____
[1] Flag leaf: 1 = NOT TWISTED 2 = TWISTED
[1] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
[1][0] MM. LEAF WIDTH (*First leaf below flag leaf*)
[2][0] CM. LEAF LENGTH (*First leaf below flag leaf*):

FORM LMGS 470-6 (6-82) (Formerly Form LPGS 470-6 (3-79), which may be used)

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11. HEAD:

[3] Density: 1 = LAX 2 = DENSE 3=Mid Dense

[1] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____

[3] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[2] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

[0][7] CM. LENGTH [1][2] MM. WIDTH

12. GLUMES AT MATURITY:

[2] Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.)

[3] Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)

[2] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[2] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[1] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[1] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[2] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

[1] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

[2] Brush. 1 = SHORT 2 = MEDIUM 3 = LONG

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

[4] Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

[0][7] MM. LENGTH [0][4] MM. WIDTH [3][8] GM. PER 1000 SEEDS

17. SEED CREASE:

[1] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[2] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[2] STEM RUST (Races) 15B-2 (TPM)

[2] LEAF RUST (Races) Has genes LR11, 26

[0] STRIPE RUST (Races) _____

[0] LOOSE SMUT

[1] POWDERY MILDEW

[0] BUNT

[0] OTHER (Specify) _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SAWFLY

[0] APHID (Bydv.)

[0] GREEN BUG

[1] CEREAL LEAF BEETLE

[1] OTHER (Specify) Biotype L Hessian Fly

HESSIAN FLY RACES: [1] GP [0] A [1] B [1] C [1] D [1] E [0] F [0] G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering		Seed size	
Leaf size	[illegible] S- INK 10	Seed shape	
Leaf color		Coleoptile elongation	
Leaf carriage		Seedling pigmentation	

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

6

CENTURY II Wheat

18D. Exhibit D: Additional Description of Century II

Since CENTURY II has not been tested in comparison with any of the six cultivars listed in Exhibit C, average data on performance in Virginia, from 1996 to1998 are presented in Tables 1-3 and 5. CENTURY II is a moderately short, mid-season soft red winter wheat with moderate straw strength, high yield potential and test weight. Head emergence of CENTURY II is 1 day later than that of 'Madison' and 'Pioneer 2580'. Plant height (36 inches) of CENTURY II is similar to that of 'FFR 555W'. Straw strength is similar to that of 'Roane' and better than that of 'Jackson'. Grain yield and test weights of CENTURY II are similar to those of 'Jackson'. Winter-hardiness of CENTURY II is moderately good but less than that of 'Madison'. Milling quality of CENTURY II is superior to that of 'Jackson' and baking quality is superior to that of 'Pioneer 2580' (Tables 6-7)

CENTURY II is moderately resistant to powdery mildew and leaf rust, but is moderately susceptible to Wheat Spindle Streak Virus and Barley Yellow Dwarf Virus (Tables 1-3, 5). CENTURY II possesses resistance to the most common stem rust race TPM. CENTURY II has expressed moderately resistant to moderately susceptible reactions to leaf and glume blotch. In seedling tests, CENTURY II was susceptible to Hessian fly biotypes GP, B, C, D, E, and L.

Table 1. Summary of performance of entries in the Virginia Tech Wheat Test, 1998 harvest.*

Brand/Variety	Yield (Bu/A) (7)	Test Weight (Lb) (7)	Date Headed (Mar 31+) (4)	Height (In) (3)	Lodging✣ (0.2-10) (6)	Powdery Mildew (0-9)❐ (1)	Leaf Rust (0-9) (1)	Head Disease★ (0-9) (1)	Spring Freeze Injury (%) (1)
VA94-54-479	66 -	53.3 -	26 -	33 -	4.3 +	3	3 -	6 +	26 +
VA95-52-60	72	56.1 +	26 -	38	3.3 +	3	3 -	5	4
POCAHONTAS-RT	79 +	55.8 +	24 -	37 -	2.3	0 -	6	4 -	2
ROANE	77 +	57.8 +	28 +	38	2.5	2 -	5	3 -	0
PIONEER BRAND 2580-B	76 +	54.7	25 -	38	1.1 -	1 -	6	5	1
FFR 555W-B	73	54.7	29 +	39 +	0.8 -	7 +	8 +	5	1
MADISON	73	54.7	25 -	40 +	2.3	4 +	6	7 +	0
JACKSON-B	73	56.1 +	28 +	38	4.7 +	4 +	6	4 -	2
PIONEER BRAND 2684-B	72	56.4 +	24 -	38	2.0	2 -	7 +	5	0
PIONEER BRAND 2643-B	71	55.8 +	26 -	33 -	0.3 -	3	6	5	2
NK-COKER 9835-D	69	53.6 -	28 +	35 -	1.8	4 +	6	5	1
NK-COKER 9803-D	66 -	55.8 +	25 -	35 -	3.9 +	6 +	5	6 +	3
PIONEER BRAND 2691-B	64 -	53.2 -	23 -	35 -	1.7 -	2 -	1 -	7 +	9
LSD (0.05)	3	0.6	1	1	0.8	1	2	1	6
Test Average	71	54.9	27	38	2.5	3	5	5	5

* The number in parentheses below column headings indicates the number of locations on which data are based. A plus or minus sign indicates a performance significantly above or below the test average.

✣ Belgian Lodging Scale = Area X Intensity X 0.2. Area = 1-10, where 1 is wheat is unaffected and 10 is entire plot affected and Intensity=1-5, where 1 is wheat standing upright and 5 is wheat lying totally flat.

❐ The 0-9 ratings indicate relative disease intensity where 0=none and 9=total plant infection.

★ This was most likely bacterial pseudomonas although there may have been septoria nodorum present.

Table 2. Summary of performance of entries in the Virginia Tech Wheat Test, 1996-97.*

Brand/Variety	Yield (Bu/A) (6)	Test Weight (Lb) (6)	Date Headed (Mar 31+) (4)	Height (In) (3)	Powdery Mildew (3)	Leaf Rust (3)	Wheat Spindle Streak (0-9)☆ (1)	Barley Yellow Dwarf (2)	Glume Blotch❐ (1)
VA94-54-479	82 +	60.5 +	32	33 -	0 -	2	3 +	1 -	2 +
VA95-52-60	78	61.2 +	33 +	37	2	1	6 +	4 +	1
PIONEER 2580-B	81 +	59.9	32	36 -	1 -	2	4 +	3	1
JACKSON-B	80 +	61.0 +	34 +	38 +	1 -	2	3 +	2 -	1
MADISON	78	59.3 -	31 -	39 +	3 +	4 +	0 -	3	1
COKER 9835-B	77	59.4 -	35 +	33 -	2	0 -	3 +	3	1
COKER 9803-B	77	61.6 +	29 -	36 -	2	0 -	0 -	2 -	1
PIONEER 2691-B	77	59.9	27 -	35 -	0 -	1	2	3	1
ROANE	77	61.8 +	35 +	36 -	0 -	1	2	1 -	2 +
FFR 555W-B	76	59.6 -	35 +	37	4 +	3	1 -	2 -	2 +
PIONEER 2643-B	74	60.5 +	31 -	32 -	0 -	2	1 -	1 -	1
PIONEER 2684-B	73	61.5 +	31 -	36 -	1 -	1	2	2 -	1
POCOHONTAS	71 -	60.9 +	31 -	36 -	0 -	4 +	5 +	5 +	1
LSD (0.05)	4	0.3	1	1	1	2	1	1	1
Test Average	76	60.0	32	37	2	2	2	3	1

* The number in parentheses below column headings indicates the number of locations on which data are based. A plus or minus sign indicates a performance significantly above or below the the test average, respectively.

☆ The 0-9 ratings indicate relative disease intensity where 0=none and 9=total plant infection.

❐ Blotch was caused by Stagonospora nodorum.

Note: There was no lodging at any test location in 1997.

Table 3. Summary of performance of entries in the Virginia Tech Wheat Test, 1995-96.*

Brand/Variety	Yield (Bu/A) (6)	Test Weight (Lb) (6)	Date Headed (Mar 31+) (4)	Height (In) (3)	Lodging** (0.2-10) (6)	Powdery Mildew (0-9)☆ (2)	Leaf Rust (0-9) (1)	Leaf❐ Blotch (0-9) (2)	Glume❐ Blotch (0-9) (1)
VA94-54-479	79	56.3	36	31 -	3.9	1 -	2	3	5 +
VA95-52-60	87 +	58.1 +	36	33 -	3.4	2	0 -	2 -	3
JACKSON-B	87 +	57.1 +	37 +	34	5.7 +	1 -	0 -	3	2 -
ROANE	87 +	59.4 +	37 +	33 -	2.6	1 -	2	3	4 +
PIONEER 2580-B	85	57.0	35 -	34	1.6 -	1 -	0 -	3	2 -
PIONEER 2684-B	84	58.8 +	35 -	34	2.0 -	1 -	2	3	2 -
FFR555W-B	84	55.8 -	38 +	33 -	2.3	5 +	7 +	3	6 +
COKER 9835-B	84	55.9 -	37 +	31 -	1.8 -	2	0 -	2 -	3
MADISON	82	56.9	36	36 +	2.5	2	3 +	5 +	2 -
COKER 9835	80	55.5 -	37 +	32 -	1.8 -	2	2	2 -	3
PIONEER 2691-B	80	55.5 -	34 -	32 -	3.6	1 -	0 -	4 +	3
PIONEER 2643-B	80	57.8 +	37 +	29 -	0.2 -	1 -	0 -	2 -	3
COKER 9803	78 -	58.4 +	35 -	32 -	4.3 +	4 +	3 +	4 +	4 +
LSD (0.05)	4	0.6	1	1	1.0	1	1	1	1
Test Average	82	56.5	36	34	3.2	2	2	3	3

* The number in parentheses below column headings indicates the number of locations on which data are based. A plus or minus sign indicates a performance significantly above or below the test average, respectively.

** Belgian Lodging Scale = Area x Intensity x 0.2. Area = 1-10, where 1 is wheat unaffected and 10 is entire plot affected and Intensity = 1-5, where 1 is wheat standing upright and 5 is wheat lying totally flat.

☆ All 0-9 ratings indicate relative disease intensity where 0=none and 9=total plant infection.

❐ Septoria leaf and glume blotch in these cases were caused by Stagonospora nodorum.

Table 5. Summary of performance of entries in the Virginia Tech Wheat Test for the harvest years 1995-1998.

Brand/Variety	Yield (Bu/A) (25)	Test Weight (Lb) (25)	Date Headed (Mar 31+) (16)	Height (In) (14)	Lodging** (0.2-10) (14)	Powdery Mildew (0-9)☆ (9)	Leaf Rust (0-9) (8)	Leaf❐ Blotch (0-9) (3)	Glume❐ Blotch (0-9) (3)
VA94-54-479	78	56.5 -	30	32 -	3.8 +	1	2 -	3	4 +
VA95-52-60	79	58.1 +	32	36 +	3.3 +	2 +	1 -	2 -	3
PIONEER 2580-B	82 +	56.6	30	35 +	1.3 -	1	2 -	4 +	3
ROANE	80	59.2 +	33	35 +	2.4	1	2 -	3	3
JACKSON-B	80	57.7	32	37 +	4.9 +	1	3	3	2 -
POCOHONTAS	78	57.6	29	35 +	2.3	0 -	3	2 -	2 -
PIONEER 2684-B	77	58.4 +	29	35 +	1.7	1	3	3	2 -
FFR555W-B	76	56.4 -	33	36	1.3 -	4 +	5 +	3	4 +
NK-COKER 9835	76	56.1 -	33	33 -	1.8	2 +	1 -	2 -	3
MADISON	75	56.6	30	37 +	2.2	2 +	4 +	4 +	3
PIONEER 2643-B	75	57.4	30	30 -	0.3 -	1	2 -	3	3
PIONEER 2691-B	74	55.8 -	27 -	33 -	2.4	1	1 -	4 +	3
NK-COKER 9803	73	58.3 +	30	34	3.9 +	3 +	2 -	4 +	3
LSD (0.05)	5	0.8	3	1	0.9	1	1	1	1
Test Average	77	57.3	31	34	2.4	1	3	3	3

* The number in parentheses below column headings indicates the number of year-locations on which data are based. A plus or minus sign indicates a performance significantly above or below the test average, respectively.

** Belgian Lodging Scale = Area x Intensity x 0.2. Area = 1-10, where 1 is wheat unaffected and 10 is entire plot affected and Intensity = 1-5, where 1 is wheat standing upright and 5 is wheat lying totally flat.

☆ All 0-9 ratings indicate relative disease intensity where 0=none and 9=total plant infection.

❐ Septoria leaf and glume blotch in these cases were caused by Stagonospora nodorum.

Table 6. Milling and baking quality of entries in the Virginia Tech Wheat Test based on evaluations of the 1997 crop.✧

ENTRY	Over-Locations Analysis			Composite Analysis				
	Milling Quality score	Baking Quality score	Flour Yield %	Micro Test Weight lb/bu	Milling Quality score	Baking Quality score	Flour Yield %	Cookie Diameter cm
MADISON=STANDARD	99.4	97.8	72.28	61.5	99.9	100.0	77.0	17.77
MADISON	99.4	97.8	72.28	61.5	99.9	100.0	77.0	17.77
JACKSON	93.3	96.1	70.44	63.1	80.7	82.7	74.9	17.42
POCAHONTAS	97.6	89.8	71.74	63.7	99.4	59.8	76.9	17.01
ROANE	88.7	87.2	69.08	64.2	70.1	52.7	74.2	16.79
VA 94-54-479	90.7	81.4	69.66	63.0	75.4	43.3	75.8	16.91
VA 95-52-60	95.9	91.2	71.23	63.2	98.0	66.7	77.1	17.14
FFR 555W	100.7	99.3	72.67	62.0	108.6	97.3	78.1	17.71
COKER 9803	93.7	97.3	70.58	64.0	88.7	86.3	75.7	17.52
COKER 9835	94.4	100.2	70.77	62.1	94.9	85.0	76.2	17.62
PIONEER 2580	89.1	89.2	69.20	62.7	76.3	53.5	74.7	16.80
PIONEER 2684	93.5	94.4	70.50	63.6	90.9	78.2	76.3	17.33
PIONEER 2643	93.5	96.1	70.50	63.3	86.6	72.4	75.8	17.27
PIONEER 2691	91.8	102.0	70.00	63.0	82.8	70.5	75.3	17.11

Table 7. Milling and baking quality of entries in the Virginia Tech Wheat Test based on evaluations of the 1996 crop.✧

ENTRY	Over-Locations Analysis			Composite Analysis				
	Milling Quality score	Baking Quality score	Flour Yield %	Micro Test Weight lb/bu	Milling Quality score	Baking Quality score	Flour Yield %	Cookie Diameter cm
CALDWELL=BENCHMARK	104.0	110.0	74.07	61.0	108.6	110.0	75.1	17.95
MASSEY=STANDARD	100.0	100.0	72.86	60.7	100.0	100.0	71.4	17.24
MADISON	100.5	100.3	73.01	60.4	97.6	90.1	71.0	16.73
POCOHONTAS	104.2	93.4	74.13	60.9	104.6	87.1	72.7	16.86
ROANE	91.9	94.3	70.44	62.6	87.8	93.3	67.9	16.89
VA 94-54-479	92.0	90.4	70.45	59.9	87.4	72.9	68.2	16.68
VA 95-52-60	100.4	98.7	72.99	61.5	100.0	85.4	70.8	16.81
FFR 555W-B	103.5	98.7	73.93	59.8	102.8	100.3	72.3	17.23
COKER 9835-B	98.7	101.4	72.46	60.3	98.9	91.2	70.3	17.16
COKER 9803	99.3	96.4	72.64	62.1	97.1	103.7	70.4	17.48
PIONEER 2580-B	93.0	90.0	70.75	60.2	86.2	82.7	68.6	16.89
PIONEER 2684-B	99.6	98.6	72.76	61.8	95.1	105.6	70.3	17.56
PIONEER 2643-B	97.6	96.4	72.13	61.7	94.7	98.8	69.9	17.29
JACKSON	96.5	98.7	71.81	62.0	95.6	84.0	69.8	16.62
PIONEER 2691-B	93.1	105.2	70.78	60.6	96.9	98.5	69.7	17.27

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Virginia Tech Intellectual Properties Inc.	VA95-52-60	Century II

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	5. TELEPHONE *(include area code)*	6. FAX *(include area code)*
1872 Pratt Dr. Suite 1625 Blacksburg, VA 24060	540-951-9374	540-951-5292
	7. PVPO NUMBER 200100126	

8. Does the applicant own all rights to the variety? *Mark an "X" in appropriate block.* If no, please explain. [X] YES [ ] NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company? [X] YES [ ] NO
If no, give name of country

10. Is the applicant the original owner? [ ] YES [X] NO *If no, please answer one of the following:*

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

[ ] YES [ ] NO If no, give name of country

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?

[X] YES [ ] NO If no, give name of country

11. Additional explanation on ownership *(if needed, use reverse for extra space)*:

Original owner Virginia Polytechnic Institute and State University assigned its ownership to current owner Virginia Tech Intellectual Properties Inc. (see attached)

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

STD-470-E (07-97) *(Destroy previous editions).*
Electronic version designed using WordPerfect InForms by USDA-AMS-IMB.

GROUP ASSIGNMENT

DISCLOSURE NO.	TITLE
98.045	Bi-Directional Full-Bridge DC/DC Converter with Unified Soft-
98.046	Integrated Auction Software
98.047	CEMIS Continuing Education Management Information System
98.048	Load Bearing Foundation Screws
98.049	Designer Glass Pitcher
98.050	All Fiber-Based Dense Wavelength Division Multiplexing (DWDM)
98.051	Processes for Preparing Fiber Reinforced Polymer Matrix
98.052	Detecting the Presence of Metal Ions via a Change in the
98.053	GeoPave Software
98.054	Single Operator Motorcycle Swingarm Stand
98.055	WhizQuest
98.056	Novel Zero-Current-Transition and Quasi-Zero-Voltage-Transition
98.057	Spiro-Helical Antenna
98.058	An Improved Continuous Current Mode (CCM) Single-stage Input
98.059	Reconfigurable Simulation of Video Performance
98.060	NutMan, Nutrient Management Software for Virginia
98.061	Optical Fiber Humidity Sensor formed by the Ionic Self Assembled
98.062	Technique to Utilize Thermal Analysis Equipment to Measure
98.063	Magnetic Cobalt Fluids in Silicone Carrier Liquids
98.064	WhizQuiz version 2.0
98.065	UPDATER: A Mobile Tool for Acquisition of Activity Progress Data
98.066	Production of Human (hFII), Porcine (pFII), and Chimeric Variants
98.067	Production of Porcine Factor VIII (pFVIII) and Variants of in
98.068	Production of von Willebrand factor (vWF) in Transgenic Animals

98.069	Expression of a Heterologous Polypeptide in Mammary Tissue of
99.001	Isolation and Characterization of a New Isoform of Fas Ligand
99.002	Choices and Challenges Discussion Videotape: Intelligence Testing
99.003	Low Conduction Loss Power Switch On Silicon Carbide and Other
99.004	Electric Field Tunable Polymer Materials For Frequency Adaptive
99.005	New N-Alkyl Semisynthetic Derivative of Natamycin, and Method of
99.006	Construction of a Commercially Viable Volumetric Dilatometer
99.007	AccessVT System
99.008	Resonant Gate Commutated Thyristor (RGCT) and Switching Gate
99.009	Enhanced Stability and Performance of Cells and Cell Components

56.002	Wheat Variety "Roane" (VA93-54-429)
56.003	Tobacco Variety VA 359
56.004	Tobacco Variety VA 355
56.005	Wheat Variety VA92-51-12
56.006	Wheat Variety VA94-52-60
56.007	Wheat Variety VA94-52-69
56.008	Peanut Variety VA 98R
56.009	VA93-54-258
56.010	Wheat Variety VA94-54-479
56.011	Wheat Variety VA95-52-60
56.012	CDH-1 (US Plant Patent No. 10610)
56.013	JEF-b1 (US Plant Patent 10411)
56.014	JAM-1 (U.Md. OTL Ref. No. LS 95-022), raspberry plant named Emily
56.015	GEL-20 (U.Md. OTL Ref. No. LS 95-023)
56.016	JCR-f1 (US Plant Patent 10,412)
56.017	KAS-1 (U.Md. OTL Ref. No. LS 95-025)
56.018	Raspberry Plant Named "Josephine"

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY (hereinafter referred to as the "UNIVERSITY"), assigns to VIRGINIA TECH INTELLECTUAL PROPERTIES, INC. (hereinafter referred to as "VTIP") all rights, title and interest in and to all of the above-listed INVENTIONS as held by the UNIVERSITY.

The UNIVERSITY, by its authorized agents, agrees that it will execute all necessary assignments as requested by VTIP, to facilitate the filing of patent applications and/or copyright registrations. It will render any reasonable assistance requested to aid in preparation of such applications and/or registrations.

The UNIVERSITY shall retain the right to make use of the INVENTIONS for internal research and other non-commercial purposes without cost to the UNIVERSITY.

All royalties, rents, payments, or any cash receipts from the sale, assignment, transfer, licensing or use of the INVENTION shall be the property of VTIP and shall be distributed according to provisions of the current UNIVERSITY Intellectual Properties Policy.

Prior to the execution of this assignment, the UNIVERSITY has not granted the right of license to make, use, or sell said INVENTION to anyone except to VTIP, nor has it otherwise encumbered its rights, title and interest in said INVENTION, and it will not execute any instrument in conflict with this Assignment.

IN WITNESS WHEREOF, the UNIVERISTY has caused this Assignment to be signed this 21 day of April, 1999.

VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

BY _____
MINNIS E. RIDENOUR
Executive Vice President

STATE OF VIRGINIA

COUNTY OF MONTGOMERY, to-wit:

The foregoing instrument was acknowledged before me this 21st day of April, 1999, by Minnis E. Ridenour of Virginia Polytechnic Institute and State University, on behalf of said University.

Katherine M. Sanders
Notary Public

My commission expires: 6/30/2001